AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (Currently amended) A speech data mining system for use in generating a rich transcription having utility in call center management, comprising:

a speech differentiation module adapted to receive speech input from a first speaker on a first channel, to receive speech input from a second speaker on a second channel, and to differentiate between the first speaker and the second speaker by associating speech received on the first channel with the first speaker and associating speech received on the second channel with the second speaker; ~~identifying speech of the first speaker with speech received on the first channel, and identifying speech of the second speaker with speech received on the second channel.~~

a speech recognition module improving automatic recognition of speech of the second speaker by recognizing the speech of the first speaker and recognizing the speech of the second speaker, partially basing the recognition of the speech of the second speaker ~~based~~ on interaction of the second speaker with the first speaker ~~preferentially employed as a reference speaker and that is adapted to employ the first speaker as the reference speaker~~ wherein the first speaker is employed as the reference speaker based on quality of the first channel being higher than quality of the second channel; and

a transcript generation module generating a rich transcript based at least in part on recognized speech of the second speaker <u>recognized by the speech recognition module</u>.

2-3.   (Canceled)

4.   (Original) The system of claim 1, wherein said speech recognition module is adapted to employ the first speaker as the reference speaker based on availability of a speech model adapted to the first speaker.

5.   (Original) The system of claim 1, wherein speech differentiation module is adapted to at least one of:

use a speech biometric trained on speech of the first speaker to distinguish between speech of the first speaker and speech of another speaker; and

use a speech biometric trained on speech of the second speaker to distinguish between speech of the second speaker and speech of another speaker.

6.   (Original) The system of claim 1, wherein said speech recognition module is adapted to identify a topic with respect to which the speakers are interacting, and to employ a focused language model to assist in speech recognition based on the topic.

7.   (Original) The system of claim 6, wherein said speech recognition module is adapted to receive an explicit topic selection from one of the speakers.

8.   (Original) The system of claim 7, wherein said speech recognition module is adapted to prompt a speaker corresponding to a call center customer to explicitly select one of a plurality of predetermined topics by pressing a corresponding button of a telephone keypad.

9.   (Original) The system of claim 7, wherein said speech recognition module is adapted to identify a predetermined topic associated with an electronic form selected by call center personnel.

10.   (Original) The system of claim 6, wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, and to identify a predetermined topic based on the keyword.

11.   (Original) The system of claim 1, wherein said speech recognition module is adapted to extract context from a speech recognition result of the first speaker, and to employ the context extracted from the speech recognition result of the first speaker as context in a language model utilized to assist in recognizing speech of the second speaker.

12. (Original) The system of claim 1, wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of the first speaker, and to supplement a constraint list used in recognizing speech of the second speaker based on the keyword extracted from the speech recognition result of the first speaker.

13. (Original) The system of claim 1, wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of the first speaker, and to rescore recognition candidates generated during recognition of speech of the second speaker based on the keyword extracted from the speech recognition result of the first speaker.

14. (Original) The system of claim 1, wherein said speech recognition module is adapted to detect interruption of speech of one speaker by speech of another speaker, and to employ the interruption as context in a language model utilized to assist in recognizing speech of the second speaker.

15. (Original) The system of claim 1, wherein said speech recognition module is adapted to detect an interruption of speech of one speaker by speech of another speaker, and to record an instance of the interruption as mined speech data.

16.   (Original) The system of claim 1, wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, to identify a frustration phrase associated with the keyword, and to record an instance of the frustration phrase as mined speech data.

17.   (Original) The system of claim 1, wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, to identify a polity expression associated with the keyword, and to record an instance of the polity expression as mined speech data.

18.   (Original) The system of claim 1, wherein said speech recognition module is adapted to extract at least one keyword from a speech recognition result of at least one of the interacting speakers, to identify a context corresponding to at least one of a topic, complaint, solution, and resolution associated with the keyword, and to record an instance of the context as mined speech data.

19.   (Original) The system of claim 1, wherein said speech recognition module is adapted to identify a number of interaction turns based on a shift in interaction from speaker to speaker, and to record the number of turns as mined speech data.

20.   (Original)   The system of claim 1, comprising a quality management subsystem employing mined speech data as feedback to at least one of a call center quality management process and a consumptible quality management process.

21.   (Currently amended) A speech data mining method for use in generating a rich transcription having utility in call center management, comprising:

differentiating between speech of at least two interacting speakers, further comprising:

receiving speech input from a first speaker on a first channel;

receiving speech input from a second speaker on a second channel; [[and]]

differentiating between speech of the first speaker and speech of the second speaker by ~~identifying speech of the first speaker with speech received on the first channel~~ associating speech received on the first channel with the first speaker, and ~~identifying speech of the second speaker with speech received on the second channel~~ associating speech received on the second channel with the second speaker;

employing the first speaker as a reference speaker based on quality of the first channel being higher than quality of the second channel;

recognizing the speech of the first speaker and recognizing the speech of the second speaker;

improving automatic recognition of speech of the second speaker based on interaction of the second speaker with the first speaker, the first speaker preferentially employed as a reference speaker; and

generating a rich transcript based at least in part on recognized speech of the second speaker.

22-23. (canceled)

24.   (Original) The method of claim 21, comprising employing the first speaker as a reference speaker based on availability of a speech model adapted to the first speaker.

25.   (Original) The method of claim 21, wherein said step of differentiating between speech of at least two interacting speakers includes at least one of:

        using a speech biometric trained on speech of the first speaker to distinguish between speech of the first speaker and speech of another speaker; and

        using a speech biometric trained on speech of the second speaker to distinguish between speech of the second speaker and speech of another speaker.

26.   (Original) The method of claim 21, wherein said step of improving automatic recognition includes:

        identifying a topic with respect to which the speakers are interacting; and

        employing a topically focused language model to assist in speech recognition based on the topic.

27.   (Original) The method of claim 26, wherein the step of identifying a topic includes receiving an explicit topic selection from one of the speakers.

28.   (Original)   The method of claim 27, wherein said step of receiving an explicit topic selection includes prompting a speaker corresponding to a call center customer to explicitly select one of a plurality of predetermined topics by pressing a corresponding button of a telephone keypad.

29.   (Original)   The method of claim 27, wherein said step of receiving an explicit topic selection corresponds to identifying a predetermined topic associated with an electronic form selected by call center personnel.

30.   (Original)   The method of claim 26, wherein said identifying a topic includes:

extracting at least one keyword from a speech recognition result of at least one of the interacting speakers; and

identifying a predetermined topic based on the keyword.

31.   (Original)   The method of claim 21, wherein said step of improving automatic recognition includes:

extracting context from a speech recognition result of the first speaker; and

employing the context extracted from the speech recognition result of the first speaker as context in a language model utilized to assist in recognizing speech of the second speaker.

32. (Original) The method of claim 21, wherein said step of improving automatic recognition includes:

extracting at least one keyword from a speech recognition result of the first speaker; and

supplementing a constraint list used in recognizing speech of the second speaker based on the keyword extracted from the speech recognition result of the first speaker.

33. (Original) The method of claim 21, wherein said step of improving automatic recognition includes:

extracting at least one keyword from a speech recognition result of the first speaker; and

rescoring recognition candidates generated by recognition of speech of the second speaker based on the keyword extracted from the speech recognition result of the first speaker.

34. (Original) The method of claim 21, comprising detecting an interruption of speech of one speaker by speech of another speaker, wherein said step of improving automatic recognition includes employing the interruption as context in a language model utilized to assist in recognizing speech of the second speaker.

35. (Original) The method of claim 21, comprising:

detecting an interruption of speech of one speaker by speech of another speaker; and

recording an instance of the interruption as mined speech data.

36. (Original) The method of claim 21, comprising:

extracting at least one keyword from a speech recognition result of at least one of the interacting speakers;

identifying a frustration phrase associated with the keyword; and

recording an instance of the frustration phrase as mined speech data.

37. (Original) The method of claim 21, comprising:

extracting at least one keyword from a speech recognition result of at least one of the interacting speakers;

identifying a polity expression associated with the keyword; and

recording an instance of the polity expression as mined speech data.

38. (Original) The method of claim 21, comprising:

extracting at least one keyword from a speech recognition result of at least one of the interacting speakers;

identifying a context corresponding to at least one of a topic, complaint, solution, and resolution associated with the keyword; and

recording an instance of the context as mined speech data.

39.   (Original) The method of claim 21, comprising:

identifying a number of interaction turns based on a shift in interaction from speaker to speaker; and

recording the number of turns as mined speech data.

40.   (Original) The method of claim 21, comprising employing the mined speech data as feedback to at least one of a call center quality management process and a consumptible quality management process.

41.   (Previously Presented) The system of claim 11, wherein said speech recognition module is adapted to employ an interactive focused language model in which yes/no questions relate to context of at least one of preceding or subsequent speech of another, interacting speaker.

42.   (Previously Presented) The system of claim 41 42, wherein said speech recognition module improves automatic recognition of the speech of the second speaker by employing previous and subsequent and recognized words of the speaker in addition to context of previous and subsequent interactions with the reference speaker.

43.   (New) The system of claim 1 wherein the said speech recognition module improves automatic recognition of the speech of the second speaker by determining a reliability of the recognized speech and, based on the reliability of the recognized speech, doing at least one of the following: confirming the recognized speech,

highlighting the recognized speech in the transcript, attempt to recognize the speech again, replace the recognized speech based on another recognition attempt.

44.   (New) The method of claim 21 further comprising determining a reliability of recognized speech and based on said reliability of recognized speech either confirming the recognized speech or attempting to replace the recognized speech with more reliable speech.